Ulysseus
EUROPEAN UNIVERSITY

CitiesMD
Handbook

UNIVERSIDAD DE SEVILLA
UNIVERSITÉ CÔTE D'AZUR
Università di Genova
TECHNICAL UNIVERSITY OF KOŠICE
MCI THE ENTREPRENEURIAL SCHOOL
Haaga-Helia University of Applied Sciences

Ulysseus
EUROPEAN UNIVERSITY

CitiesMD
Ulysseus

NAME OF THE PROGRAMME:
Joint European Master Degree in Efficient and Sustainable Energy Transport and Mobility to Build the Smart Cities of the Future – Ulysseus CitiesMD

COORDINATING INSTITUTION:
University of Seville

Joint Master Degree awarded by the University of Seville, Université Côte d'Azur and Management Centre Innsbruck, in collaboration with the University of Genoa, the Technical University of Košice and Haaga-Helia University of Applied Sciences, as Ulysseus European University.

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Co-funded by the European Union

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Co-funded by the European Union

1.ABOUT ULYSSEUS

1 ABOUT ULYSSEUS

1.1. Ulysseus European University

Ulysseus is one of the currently 50 selected European Universities alliances. The alliance includes eight diverse universities solidly involved in the development of their regions and cities: University of Seville (USE); Université Côte d'Azur (UniCA); Università degli studi di Genova (UniGe), Technical University of Košice, (TUKE); Management Center Innsbruck (MCI); Haaga-Helia University of Applied Sciences (HH); the University of Münster (UMM), and the University of Montenegro (UCG). The University of Münster and the University of Montenegro are full members of Ulysseus since November 1, 2023.

From the oldest to the youngest, from comprehensive to specialised business and technical Universities, from established, research-based Universities to experts in entrepreneurship and academic innovation, ours is a diverse alliance. This diversity and common goals have been used to create a dynamic and versatile European University.

1 ABOUT ULYSSEUS

1.2. The Ulysseus campus

The Ulysseus Campus is composed by the following joint structures:

- **The Central Management Office** for general management and coordination of the European University. It has several units located in Seville (General Coordination Unit, Dissemination Unit), Nice (Digitalization Unit, Project Office) and Innsbruck (Mobility Office).

- **The Ulysseus Digital Platform,** serving digital solutions for online learning and teaching (the Ulysseus Moodle), collaborative work, networking, meetings, (Ulysseus MS Teams), intranet (Ulysseus SharePoint) and the Match4Coop application, aimed at facilitating networking and project matchmaking among researchers and with associated partners. Additionally, an Open Science repository for spreading results, the Ulysseus R&I capacities and synergies database, and digital spaces for citizen science (virtual Science Shop) will be available. The Ulysseus Digital Platform is the virtual environment for teaching and learning. It provides virtual classrooms, e-learning/assessing spaces for students (i.e., Ulysseus Moodle), and teachers (i.e., pedagogical competence courses), as well as collaborative workspaces (i.e., for teacher's transnational teams to organize their teaching, for student's collaborative projects, for COIL projects among teachers and students at different Ulysseus universities).

1 ABOUT ULYSSEUS

1.2. The Ulysseus campus

- **The 8 Ulysseus Innovation Hubs (IHs).** One at each university, aligned with eight regional Research and Innovation Smart Specialisation Strategy (RIS3) and local challenges:

1. Sustainable Energy, Transport, Mobility for Smart Cities (USE, Seville)
2. Ageing and Wellbeing (UniCA, Nice)
3. Robotics (UniGe, Genoa)
4. Sustainable Entrepreneurship & Impact (MCI, Innsbruck)
5. Digitalization transformation of industry (TUKE, Košice)
6. Applied Artificial Intelligence for business and education (HH, Helsinki)
7. Socio-ecological sustainability (UMM, Münster)
8. Cybersecurity (UoM, Podgorica)

These challenges also respond to the UN Sustainable Development Goals, the European Green Deal, and the Horizon Europe clusters and missions. IHs are the centre of gravity of research-driven education. Every IH is developing a common structure comprising a joint research center (from existing facilities at each University), research facilities, a joint incubator, a living lab, and spaces for dissemination, such as open classes, among others.

- **The Ulysseus Students Association**, under development by TUKE.

1 ABOUT ULYSSEUS

1.2. The Ulysseus campus

Central Management Office (USE)

- General Coordination unit (USE)
- International Center (MCI)
- Digitalization Unit (UniCA)
- Dissemination Unit (USE)

Digital Platform (UniCA)

- Personal sites
- Access to scientific facilities
- Joint repository
- Virtual courses and mobility
- M4C App
- Governance & joint structures toolbox

Ulysseus Students Association (TUKE)

8 Innovation Hubs (All)

- Joint Research Centers
- Incubators
- Living Labs
- Open Classes

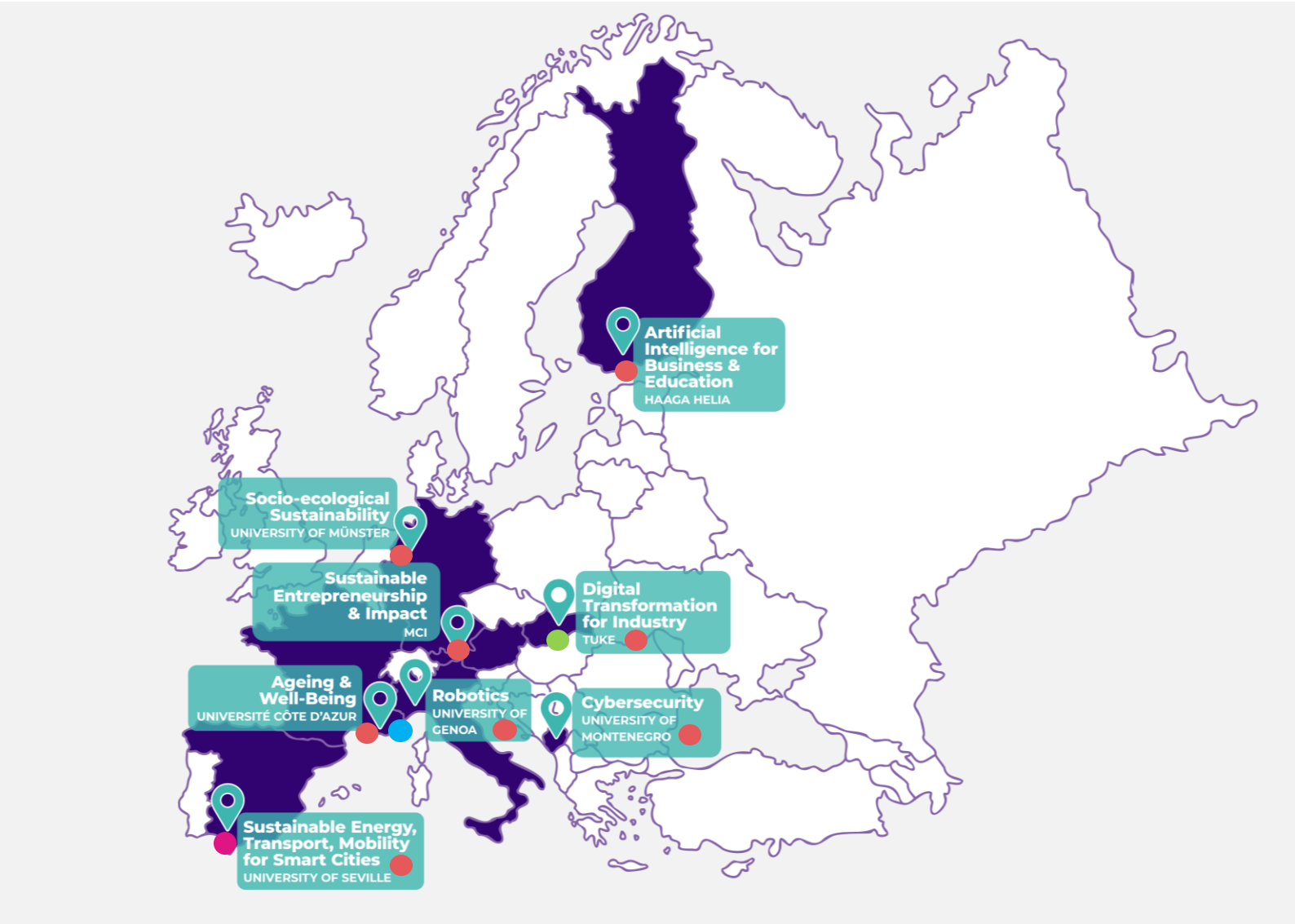


Figure 1. Ulysseus campus

1 ABOUT ULYSSEUS

1.3. Ulysseus academic and research goals

The process of transformation towards the Ulysseus European University involves the co-creation, by the Ulysseus Community, of interdisciplinary, student-centred, flexible and challenge-based Joint European Master Degrees, and subsequent Joint European PhD programs, with interlinked research and innovation activities. This synergistic vision is fully aligned with the EC Higher Education Transformation Agenda enhancing a key synergy initiative between the European Education Area (EEA) and the European Research Area (ERA), which also comprises the Skills Agenda.

Ulysseus aims to contribute to regional and local development. Thus, the alliance has undertaken that these joint degrees shall be co-designed within the framework of the Ulysseus Innovation Hubs, the joint structures for collaboration and co-creation of the Ulysseus community (partner universities, including students, and associated partners).

2.WELCOME TO CITIESMD

2 WELCOME TO CITIESMD

A very walm welcome to Ulysseus CitiesMD!

Ulysseus CitiesMD is a 2-years Joint European Master Degree programme in Efficient and Sustainable Energy Transport and Mobility to Build the Smart Cities of the Future.

Ulysseus CitiesMD aims at offering a joint and fully transnational challenge-based programme that bridges the areas of Energy, Transport, Mobility and Smart Cities in an interdisciplinary way, to address the key challenges in energy transition and decarbonized systems, key priorities in European politics and interest. This topic selection builds on the experience of the partner universities in delivering programmes.

Ulysseus CitiesMD is starting in the academic year 2024-2025 and it is offered by Ulysseus European University. This joint Master Degree is awarded by the University of Seville (Seville), Université Côte d'Azur (France) and Management Centre Innsbruck (Austria), in collaboration with the University of Genoa (Italy), the Technical University of Košice (Slovakia) and Haaga-Helia University of Applied Sciences (Finland), as Ulysseus European University.

Coordinated by the University of Seville, it comprises a total of 120 ECTS which will be completed during the course of 2 years. It is divided into two years (4 semesters, 30 ETCS each), with three main parts: the "Core", the "Flexible semester, and the "Getting into the sector semester".

From the structural point of view, Ulysseus CitiesMD offers flexible and modular pathways, with embedded mobility (physical, virtual or blended) and traineeships, which will be tailored to the students' preferences for research, innovation or professional activity.

2 WELCOME TO CITIESMD

One of the key distinguishing features of CitiesMD is the option to enjoy international mobility across different HE institutions in Europe. With this mobility scheme, a UlysseusCitiesMD student will have a minimum of 1 and a maximum of 3 periods of physical mobility (6 months), with the possibility of taking online courses from other partner universities.

SEMESTER 1

During the first programme year, students will enrol at University of Seville (Spain). They will spend Semester 1 at ETSI (Escuela Técnica Superior de Ingeniería), Camino de los Descubrimientos, 41092, Seville (Spain).

SEMESTER 2

Students can spend Semester 2 at the University of Seville (Spain) or at Technical University of Košice (Slovakia) on a mobility basis, allowing them to complete the first year in two different universities.

SEMESTER 3

For Semester 3, students will be able to choose to go either to

- Université Côte d'Azur (France),
- MCI | The Entrepreneurial School ® (Austria)
- University of Genoa (Italy)
- Haaga-Helia University of Applied Sciences (Finland), depending on the elective courses that they select.

Mobility during Semester 3 is expected to be blended, with onsite courses followed at the host university and the possibility of taking online courses in the remaining Higher Education Institutions.

SEMESTER 4

For Semester 4, students can choose either to go to any of the six partner universities for their Traineeship and Master Thesis modules.

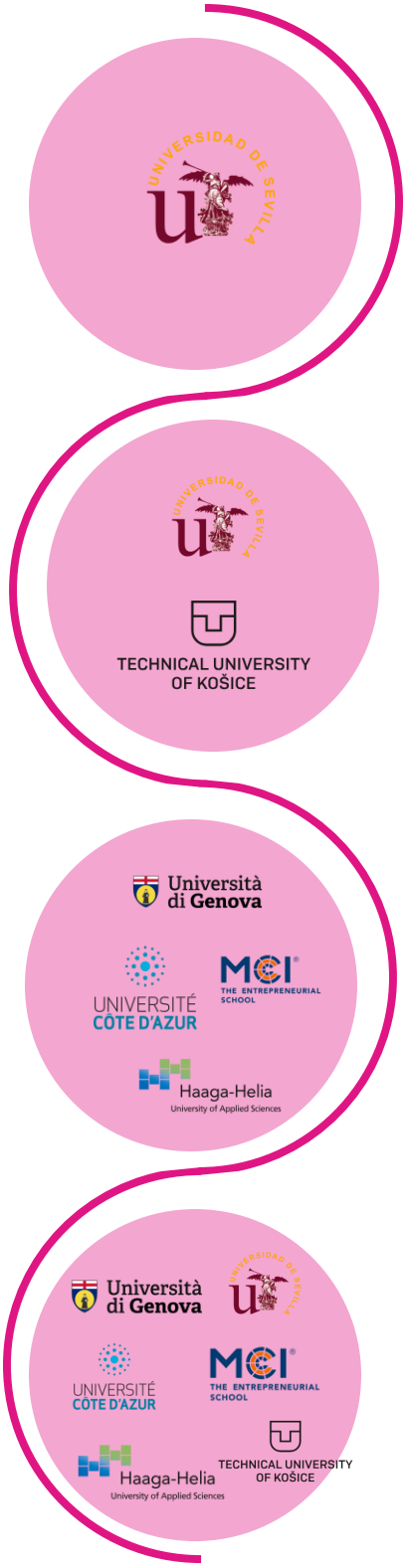


Figure 2. CitiesMD distribution by semester

2 WELCOME TO CITIESMD

2.1. Workload and length

Ulysseus Cities MD is a 120 ECTS study programme, divided into two years (4 semesters, 30 ETCS each), with three main parts (the “Core”, the “Flexible semester, and the “Getting into the sector semester”).

2.1. General objectives and learning outcomes

Ulysseus CitiesMD combines specific and interdisciplinary training in the areas of Energy, Transport, Mobility and Smart Cities with complementary training offered at each partner university and training in high level digital skills, languages, critical thinking, creativity, innovation, leadership, and entrepreneurship as key transversal skills to provide solutions to global problems.

Ulysseus CitiesMD uses Programme Learning Outcomes (PLOs) that describe what a student knows, under-stands, and is able to do upon completion of the programme, and workload (ECTS) in its curriculum design and delivery in placing the student at the centre of the educational process.

2 WELCOME TO CITIESMD

2.2. General objectives and learning outcomes

Ulysseus CitiesMD faces forthcoming energetic challenges in urban contexts from a global perspective. As a result of the co-creation process, an interdisciplinary design has been delivered, gathering a set of Programme Learning Outcomes (PLOs) defined by such a multi-focal vision, targeting the acquisition of both hard and soft skills. In this sense, the graduate's profile is versatile and flexible, able to tackle complex challenges in the field of sustainable energy in urban contexts from different perspectives, building on two main pillars: a) innovation, based on a strong technical knowledge, and b) capacity to interrelate and interconnect such knowledge with other disciplines, widening the array of potential solutions.

Ulysseus CitiesMD PLOs are:

PLO1 **Understand smart grid management** techniques and technologies.

PLO2 **Know the latest technological developments in renewable energy generation.**

PLO3 **Understand the challenges of electrical power systems with High-Level Penetration of Renewable Energy** and Distributed generation of electricity and heat.

PLO4 **Know and understand Energy Efficiency** and management of Smart Buildings

PLO5 **Make a participative, complex, and integrated diagnosis of a social habitat situation taking into account the interaction of physical, social, cultural, economic and political contexts.** Acquire an international perspective about new paradigms for housing in the smart cities of the future.

2 WELCOME TO CITIESMD

2.2. General objectives and learning outcomes

PLO6 **Select the most appropriate storage technologies** for each application based on their technical and economic characteristics.

PLO7 **Make a participative, complex, and integrated diagnosis of mobility and transport situation** taking into account the interaction of physical, social, cultural, economic and political contexts. Acquire an international perspective about new paradigms for mobility and transport in the smart cities of the future.

PLO8 **Interpret the international legal framework** (mainly in the European context) regarding the integration of renewable energy into electrical networks.

PLO9 **Acquire a global-local perspective about the ecological transition.**

PLO10 **Design participative processes** for habitat social management.

PLO11 **Work with innovative methodologies,** such as design thinking, co-creation, and effective communication.

PLO12 **Develop management, leadership, and communication skills.**

PLO13 **Design successful** projects.

PLO14 **Develop a professional or initiate a research & innovation career in the sector.**

PLO15 **Identify and act upon opportunities and ideas to create social, cultural, and financial value for others, including translating innovations into feasible business solutions, with sustainability at their core.**

2 WELCOME TO CITIESMD

2.2. General objectives and learning outcomes

PLO16 **Formulate knowledge, ideas, and technology** to create new or significantly improved products, services, processes, policies, new business models or jobs, and to mobilize system innovation to contribute to broader societal change, while evaluating the unintended consequences of innovation and technology.

PLO17 **Think beyond boundaries and systematically explore** and generate new ideas.

PLO18 **Engage and act internationally and to function effectively across cultures,** sectors and/or organizations, to think and act appropriately and to communicate and work with people from different cultural and organizational backgrounds.

PLO19 **Identify short- and long-term future consequences of plans and decisions** from an integrated scientific, ethical, and intergenerational perspective and to merge this into a solution-focused approach, moving towards a sustainable and green society.

PLO20 **Demonstrate decision-making and leadership** based on a holistic understanding of the contributions of Higher Education research and business to value creation, in limited-sized teams and contexts.

All these PLOs have been transformed into more specific Module Learning Outcomes (MLOs) in order to equip the students with the desired skills and competences. These MLOs, explained in detail, can be found on the programme's website, so that the candidates have access to the knowledge and abilities that are expected to be achieved within every module.

3.GENERAL INFORMATION

Key information about this programme

3 GENERAL INFORMATION

3.1. Universities and stakeholders involved

To achieve the programme objectives, Ulysseus CitiesMD has been developed in a co-creation effort, to meet students' needs and expectations. This includes Programme Learning Outcomes (PLOs) that describe what the student knows, understands and is able to do upon completion of the programme, but also aspects related to the study programme, learning, teaching and assessment. Students, sector professionals and academic experts have contributed to this process, guaranteeing that all perspectives are considered by the programme, with especial regard to the intended learning outcomes, innovation in the learning process and evaluation of competence acquisition.

3.2. Employment opportunities

The new city concept and its smart management will need new professional profiles highly qualified in technical terms and with a strong transversal component, bridging with areas that are directly related to such technical capabilities but also other knowledge areas that enrich the professional and make them able to make more comprehensive decisions in relation to the smart cities of the future.

Although the Master does not lead to a regulated profession, it strongly supports student employability, industry-specific, innovation and entrepreneurial competences, intercultural communication, and academic career progression. Through the "Career Guidance Programme", Ulysseus CitiesMD helps students to identify multiple career pathways, aligning learning outcomes to industry, business, academia and civil society stakeholder needs, and fostering of a broad industry- and research-ready skillset.

3 GENERAL INFORMATION

3.3. Employment opportunities

Graduates will have many potential pathways of employment, among others:

1) R&D Project Manager for interdisciplinary Smart City projects

2) Product Engineer, Process Engineer or R&D Engineer

With CitiesMD you will gain enough expertise to work as a Product Engineer, Process Engineer or R&D Engineer specialized in a field related to smart cities such as:

- Smart Grids and Power Electronics Devices
- Energy Efficiency in Buildings
- Optimal design and integration of Urban Distributed Renewable and Low
- Carbon Technologies
- Optimization and Digitalization of Smart Cities
- Mobility and Transport Issues in Smart Cities

3) Energy Policy Adivisor

CitiesMD will enable to work as an advisor on energy policy and market regulations, standards and grid codes, with a social and urban perspective. With this role you may work in either public offices (state or NGO's) or in the private sector.

4) Research & Innovation

In addition, graduates will be able to continue their professional career in the field of research and innovation, as Ulysseus CitiesMD will be followed up by UlysseusCitiesPhD, a Joint European PhD Programme that will pursue research and innovation in the context of the smart cities of the future.

3 GENERAL INFORMATION

3.4 The Study Programme

ECTS and semester division

To achieve the learning outcomes, Ulysseus CitiesMD consist of 120 ECTS divided into two years:

1. **A first year,** with a both interdisciplinary and technically focused core programme that provides students with a foundation on specific technical and technological aspects.

2. **A second year** with a very flexible design. The offer will provide transversal aspects, including an intensive course on entrepreneurship, and courses which complement the technical curriculum, equipping students with avant-garde knowledge and skills related to the smart cities of the future. Students will be able to follow courses on transversal competences and a wide range of Ulysseus educational activities. The programme also includes the opportunity to do a traineeship in a company or a research group in order to enforce the research profile of the student, who can go deeper in this field of expertise to face doctoral studies, and the completion of a master thesis.

The Ulysseus CitiesMD temporal and modular structure, as well as its distribution in semesters, partner universities and teaching formats are illustrated in the following pages.

3 GENERAL INFORMATION

3.4. The Study Programme

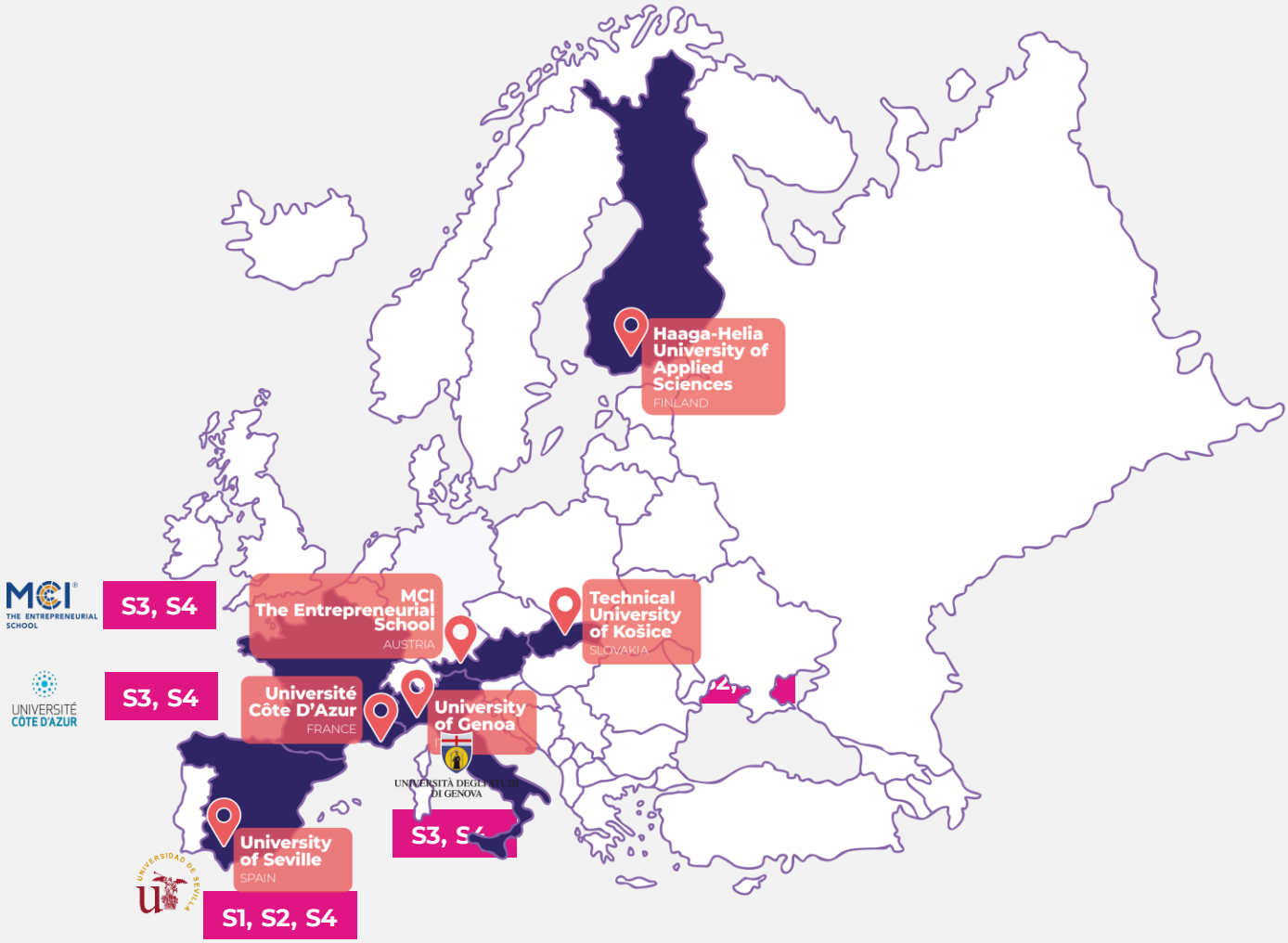


Figure 3. Map of distribution of Ulysseus CitiesMD semesters, modules, student mobility, and teaching formats within the Ulysseus Campus

3 GENERAL INFORMATION

3.5. The Study Programme at a glance

S1

Green Module 1 (3 ECTS); compulsory
- Students: on-site at USE
- Teaching: on-site (USE), or online (all partner universities)

Smart Grid Module (27 ECTS); compulsory
- Students: on-site at USE
- Teaching: on-site (USE) with participation of UniCA, MCI and TUKE (on-site/online)

S2

Green Module 2 (3 ECTS); compulsory
- Students: on-site at USE or TUKE (on a mobility basis)
- Teaching: on-site (USE, TUKE) or online (all partner universities)

Optimization & Digitalization Module (15 ECTS); compulsory
- Students: on-site at USE or TUKE (on a mobility basis)
- Teaching: on-site (USE, TUKE) with participation of UniCA (on-site/online)

Mobility and Transport Module (12 ECTS); elective
- Students: on site at USE or TUKE (on a mobility basis)
- Teaching: on-site (USE, TUKE) with participation of UniCA (on-site/online)

Energy efficiency and smart buildings Module (12 ECTS); elective
- Students: on site at USE or TUKE (on a mobility basis)
- Teaching: on-site (USE, TUKE) with participation of UniCA (on-site/online)

S3

Green Module 3 (3 ECTS); compulsory
- Students: on-site at UniCA, MCI /UniGe, HH (on a mobility basis)
- Teaching: on-site (see above) or online (all partner universities)

Specialization Module (27 ECTS); elective
- Students: on site at UniCA, MCI / UniGe, HH (on a mobility basis)
- Teaching: on-site (see above) or online (all partner universities)

Transversal skills Module (27 ECTS); elective
- Students: on-site at UniCA, MCI / UniGe, HH (on a mobility basis)
- Teaching: on-site (see above) or online (all partner universities)

S4

Traineeships Module (15 ECTS); compulsory
- Students: on-site at USE, UniCA, MCI / TUKE, UniGe, HH (on a mobility basis)
- Teaching: on-site (see above)

Master Thesis (15 ECTS); compulsory
- Students: on-site at USE, UniCA, MCI/ TUKE, UniGe, HH (on a mobility basis)
- Teaching: on-site (see above) and online (all partner universities)

Figure 4. Study programme, semester by semester

2 GENERAL INFORMATION

3.5. The Study Programme at a glance

1st semester

Smart Grid and renewable production and Integration (Electric power systems, renewable energy)	**Green** (Enviromental awareness)	**Smart Grid and renewable production and Integration** (Renewable Energy Integration, storage technologies and Power Electronics)

2nd semester

Optimization and digitalization of smart cities	**Green** (Descarbonized systems)	**Mobility and transport in smart cities** **Energy efficiency and smart buildings**

3td semester

Specialization	**Green** (Energy Policies and regulation)	**Specialization**	
Transversal skills		**Transversal skills**	**Entrepreneurship**

4th semester

Traineeships	**Master Thesis**

1. CORE:
·**Green Block**:
· Green Module (9 ECTS), with 3 ECTS in each S1, S2 and S3
·**Foundations on Smart Grids Block**:
· Smart grid and renewable production and integration Module (27 ECTS)
·**Smart Block::**
·Optimization & digitalization of smart cities Module (15 ECTS)
· Mobility and transport in smart cities Module (12 ECTS)
· Energy efficiency and smart buildings Module (12 ECTS)

2. FLEXIBLE SEMESTER
·Specialization Module (27 ECTS)
·Transversal skills Module (27 ECTS), including Entrepreneurship (6 ECTS) Summer/Winter camps are forecasted in the flexible semester

3. GETTING INTO THE SECTOR SEMESTER
·Traineeships Module (15 ECTS)
·Master Tesis Module (15 ECTS)

Figure 5. Ulysseus CitiesMD temporal and modular structure

3 GENERAL INFORMATION

3.6. The Study Programme in detail

YEAR 1 – "The CORE"

As the technical and technological training to be taught mainly during the first programme year, "The Core" comprises three main blocks with five modules:

a) The "Green" block, corresponding to the Green Module (9 ECTS, semesters 1, 2 & 3; compulsory) vertebrates the contents dealing with an environmentally friendly mindset, the 2030 agenda and SDGs, including environmental awareness, decarbonized systems and energy policies and regulation at the EU level, among other contents. This module will be in the first three semesters in a hybrid seminar format (on-site, online), taught by experts in the fields, both from the six Ulysseus partner universities, the public or private sector, and external experts. The module starts with a contextualization seminar at the beginning of the study programme that locates Ulysseus CitiesMD in time and space. This module fosters innovative teaching and learning and is certified as a micro-credential.

b) The "Foundations on Smart Grids" block, corresponding to the Smart Grid and Renewable Energy Production and Integration Module (27 ECTS, semester 1, compulsory), covering the most relevant aspects of electrical systems supporting cities. The core contents of the programme are developed around renewable energy, generated and integrated into the system by means of power electronics, energy management in smart cities, with a predominance of electrical energy from sustainable sources. The concept of "city" is extended to an environment of mobility and sustainable and efficient transport and the concept of "smart" is achieved by the management of the global city system. This common thread runs throughout the first programme year, with two differentiated semesters. This module will be offered by USE along the first semester in a hybrid format (on-site, online), taught by experts in the fields mainly from USE and TUKE, with the participation of teachers/trainers from UniCA and MCI, as well as associated partners and external experts.

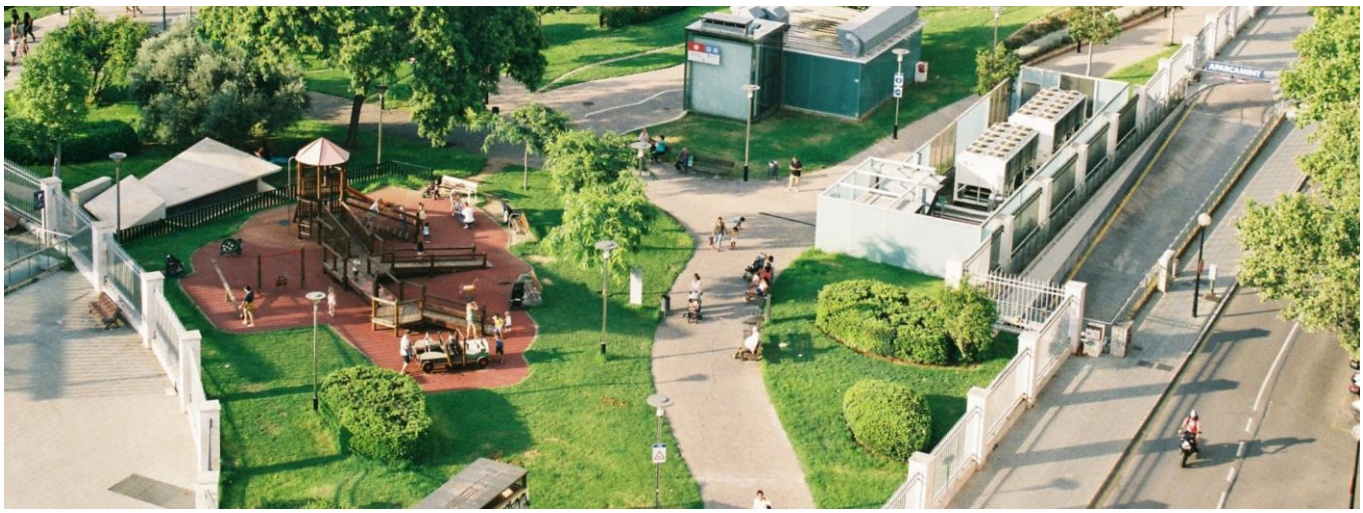
3 GENERAL INFORMATION

3.6. The Study Programme in detail

YEAR 1 – "The CORE"

c) **The "Smart" block**. Once the basic structure of the city is set, the "smart" aspect needs to be developed, this includes 3 modules, offered by USE and TUKE in a hybrid format (on-site, online), taught by experts in the fields mainly from USE and TUKE, with the participation of teachers/trainers from UniCA, as well as associated partners and external experts:

- **A common Optimization and Digitalization of Smart Cities Modul**e (15 ECTS, semester 2, compulsory). This is a compulsory module including digitalization, and system, structure and device optimization. Different kinds of applied optimization algorithms are to be covered, including artificial intelligence, big data, and system interactions enabling the implementation of a city smart management.
- **Mobility and Transport in Smart Cities Module** (12 ECTS, semester 2, elective, specialization elective track). This is an elective module that includes city mobility, electric vehicles, logistics, and traffic management, among other topics.
- **Energy efficiency and Smart Buildings module** (12 ECTS, semester 2, elective, specialization elective track). A second optional track including buildings, smart management, new building materials, heat pump technologies, heat storage, etc.



3 GENERAL INFORMATION

3.6. The Study Programme in detail

YEAR 2

Apart from the remaining 3 ECTS of the Green Module, in Year 2 students will be offered:

a) The "FLEXIBLE SEMESTER". In this semester, two fully elective modules are offered, from which students can select a personalized track containing courses from any module:

- **The Specialization Module** (27 ECTS, semester 3, elective) is oriented towards a further specialization in smart cities by means of elective courses. Each partner university offers elective courses for students to acquire a deeper understanding of the technical aspects and specific competences related to smart cities. This module also enables students to keep up with the latest research and innovation developments in the field and brings the latest challenges in the sector so that students can grasp what the future of smart cities will look like. The module is offered by all university partners in a hybrid format (on-site, online), with the participation of associated partners and external experts.

- **The Transversal skills module** (27 ECTS, semester 3, elective), containing a set of transversal training courses and activities dealing with innovation (i.e., business management, intellectual property rights, entrepreneurship, creativity, or leadership), high level digital skills, communication skills, cultural courses, and languages, among others. A course on entrepreneurship is offered in this semester (Máximum of 6 ECTS). Every Ulysseus IH has a joint incubator that will support this entrepreneurship training.

3 GENERAL INFORMATION

3.6. The Study Programme in detail

YEAR 2

b) The "GETTING INTO THE SECTOR SEMESTER". A fourth semester focused on the labour market/research by means of two modules:

The Traineeships module (15 ECTS, semester 4, compulsory). Two main traineeships options are available:

- In a specialized company or a public administration. In close relationship to the IH on Energy, Transport, Mobility and Smart Cities hosted by the University of Seville, but with nodes available in all the 6 partner countries, students can put into practice the skills acquired throughout the programme and gain skills to complement their profiles and get ready to enter the labour market.

- In a research group of one Department of the six university partners, or a Research Center, where the students can work in research and innovation projects facing the challenges of the smart cities of future.

The Master Thesis module (15 ECTS, semester 4, compulsory). The master thesis aims at providing answers to a realistic challenge project from an innovative and interdisciplinary point of view. It can be business (i.e., in a public or private institution)- or research (i.e., a research department or research center)-oriented and combined with the traineeship period. Students will receive a joint supervision between researchers from the partner universities and external experts (if research-oriented) or associated partners (if professionally oriented). External experts and associated partners will be also involved in the evaluation committee of the master thesis dissertations.

3 GENERAL INFORMATION

3.7. Joint Degree and joint Diploma Supplement awarded

At the completion of the study programme, the student will receive a physical fully accredited joint degree diploma in Master studies by USE, MCI and UniCA, with full legal value in all EU countries, and its joint diploma supplement, including all the information regarding the programme, the courses that have been completed and the different grading systems.

3.8. Funding Opportunities

UlyssusCitiesMD does not currently offer any scholarships. However, you may apply for another type of study funding for which you may be eligible. In addition to the national scholarships in your country, we also recommend you to search in advance for other options of potential scholarships in the following sources:

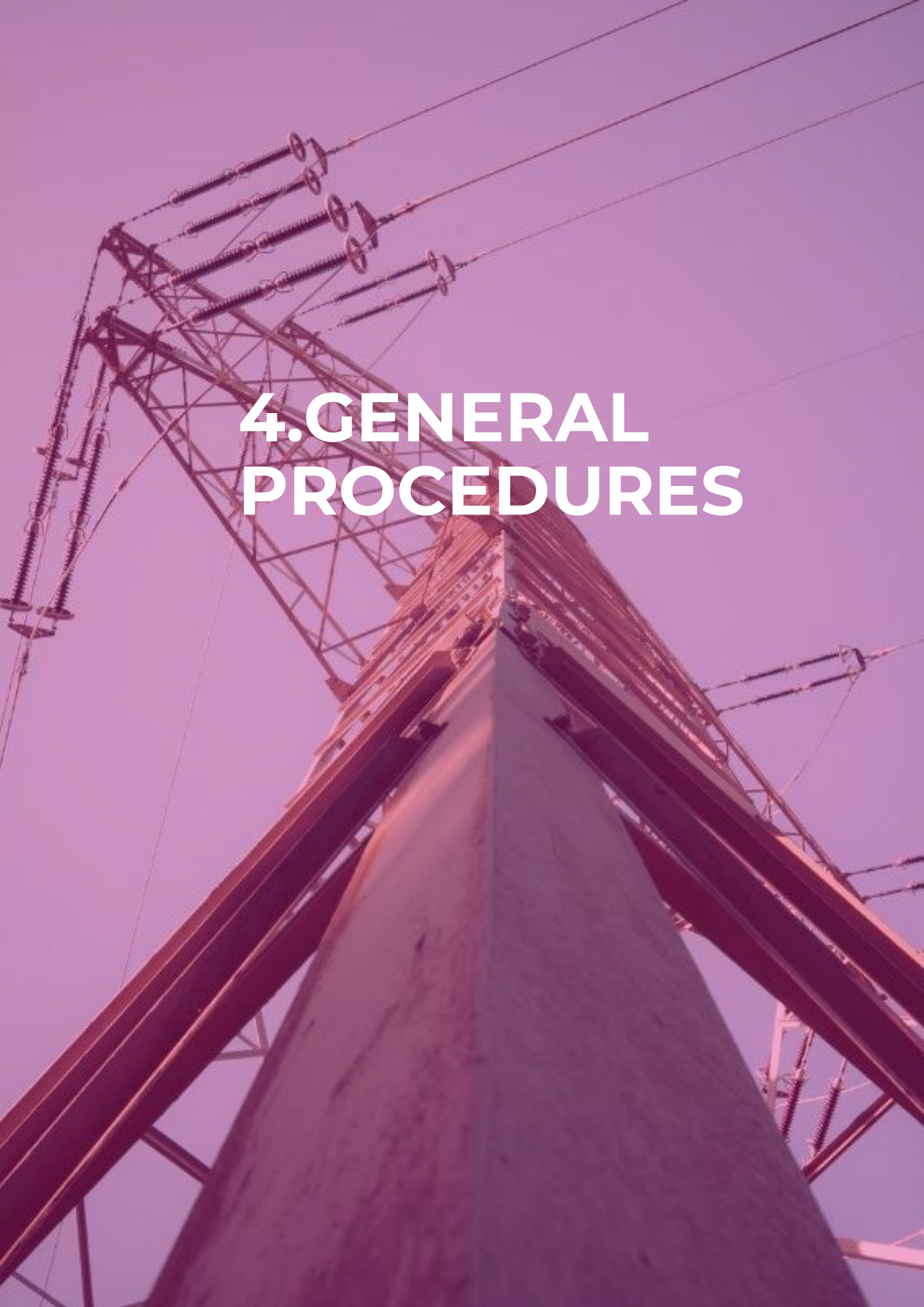
- European students (**European Funding Guide**)
- Non-European students (**International Financial Aid and College Scholarship Search**)

3 GENERAL INFORMATION

3.8. Equal opportunities policy

Ulysseus CitiesMD is committed to foster diversity, inclusiveness and gender equality, trough tailored admission measures for all categories of disadvantaged or discriminated groups (ethnic minorities, people with migration background, or with disability, people from poor families, or students of low qualified parents, among others).
This policy is promoted in a three-fold approach:

- The specific score given within the selection criteria (up to 10 points)
- The Selection Committee will have the right to reserve a 5% quota of every first-year intake to promote diversity, inclusiveness, and gender equality.
- Ulysseus CitiesMD will facilitate recognition of qualifications and prior learning to students with different cultural backgrounds, in order to improve social inclusion and diversity.



4.GENERAL PROCEDURES

4 GENERAL PROCEDURES

4.1. Admission and selection

The entry requirements and admission criteria for the Ulysseus CitiesMD programme are common for all students.

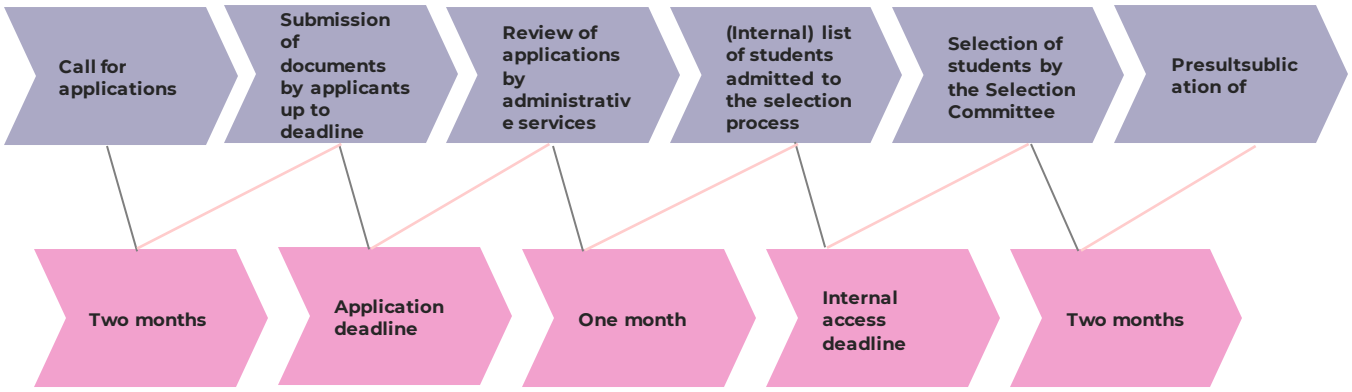


Figure 6. Ulysseus CitiesMD application and selection procedure

4.1.1. Eligibility requirements to access to the programme

UlysseusCitiesMD has been designed for people who intend to work or further research in the field of smart cities. Candidates should have a scientist/technical/engineer or professional background aligned with the programme, so they can follow smoothly the lectures. This alignment is both an eligibility an evaluation criterion.

Since the UlysseusCitiesMD content sits in the confluence of many engineering sciences (Energy Engineering, Industrial Technology Engineering, Electronic Engineering and Robotics, Electric Engineering, Aerospace Engineering, Civil and Building Engineering), students from these backgrounds are welcome. Moreover, the following other degrees will be taken into consideration: Physics, Computational Engineering, Mechanical Engineering, and other similar fields.

4.1.1. Eligibility requirements to access to the programme

Thus, the candidate's profile should be based on the following:

- basic knowledge of math: multivariate differential calculus, linear algebra, statistical mathematics
- basic knowledge of electric circuits and electrical machines: DC, single-phase AC, three-phase AC, DC/AC, DC/DC, AC/DC, transformer, induction motor, synchronous generator
- basic knowledge of signal processing, basic knowledge of dynamic systems modelling and automatic control
- basic knowledge of heat transfer, heat exchangers and thermal engineering
- basic notions about ventilation, heating and air conditioning systems
- knowledge about basic data types and data representation
- programming skills and basic knowledge of programming languages, operating systems and network communications.

Requirements:

- **Applicants must have a university qualification corresponding to a Bachelor's degree (EQF level 6)** in one of the relevant smart-city-related fields.

- **Minimum English level B2,** according to the CEFR (Common European Framework of Reference for Languages), proof of which must be provided as a supporting document. Candidates from countries where English is not an official language must demonstrate their knowledge of English by proving that they have received their education in English, or with a certified language level equivalent to B2 using the CEFR.
-

4 GENERAL PROCEDURES

4.1. Admission and selection

4.1.2. Application procedure and documentation

All applications for admission will be submitted online, through the official application system of the Ulysseus CitiesMD website..

The following supporting documents must be uploaded into the application system:

1. Copy of a valid ID document (passport, identity card, etc.). In case of dual nationality, copy of a second passport/ID card proving the second nationality

2. Copy of the official university first cycle qualification from a HEI (Bachelor-EQF level 6, or equivalent) and transcript of academic records.

Considerations about the qualifications:

- For students coming from EHAE universities (including all Ulysseus university partners), bachelor's degrees will be automatically recognized, according to the Lisbon convention and the Ulysseus Academic Recognition Agreement.
- Students with a bachelor-equivalent qualification issued by a non-EHEA HEI must provide a document issued by their university that certifies the level of studies and stating that the diploma allows the student to access Master studies in the student's university country. Students will be required to present officially certified copies and translations to English of their diplomas and grades, and an official certificate of the ECTS content of the subjects and of their position within their corresponding cohort.

4 GENERAL PROCEDURES

4.1. Admission and selection

4.1.2. Application procedure and documentation

- Successful admission to Ulysseus CitiesMD does not imply that the applicant's previous qualification has been validated to a comparable EHEA qualification, entitling rights or granted recognition for any other purposes than access to the Master's degree programme.
- If a candidate is in the process of obtaining the Bachelor's degree, the applicant can apply for the admission. The applicant must present a letter, written by their university, stating the expected date of graduation and a detailed transcript of records.

3 Proof of B2 (CEFR) English level (accepted certificates are University of Cambridge Certificates, TOEFL, IELTS, ACLES, among others).
4. A complete and updated curriculum vitae in Europass format in English.
5. Motivation letter, indicating the student's background and their interest in pursuing this master's degree.
6. [OPTIONAL] Recommendation letters from up to two referees
7. [OPTIONAL] Any other documents characterizing applicant's credentials, like research memories, mathematical competitions diplomas, etc.

4 GENERAL PROCEDURES

4.1. Admission and selection

4.1.3. Selection process

After closing the deadline for applications, the **Ulysseus CitiesMD Selection Committee** will evaluate them.

It is the responsibility of the Ulysseus CitiesMD Secretariat in Seville, as coordinating institution, to process all documents sent by the applicants of each intake and to make them available to all members of the selection committee for evaluation.

In a first instance, the Selection Committee will select those applicants who meet the Admission Requirements and afterwards will establish a ranking considering the following criteria, rated on a scale of **0 to 60**:

1) **Academic results of the student** (typical requirement: Grade Point Average). This can be modulated according to the contents and the perceived level of the subjects carried out (up to **20 points**).
2) **Relevant work experience related to the field of the master programme and other merits**, as stated in the CV, taking into consideration the candidate age. Merits such as volunteering and civic engagement activities will be also considered (up to **15 points**).
3) **Motivation letter** by the student (up to **5 points**).
4) **Recommendation letters** (up to **5 points**).
5) **English level +B2 and/or knowledge of national languages of the Ulysseus consortium (minimum B2**) (up to **5 points**).
6) **Other merits according to the criteria of the Selection Committee**, including linguistic and cultural diversity, inclusiveness, and gender equality (up to **10 points**).

4 GENERAL PROCEDURES

4.1. Admission and selection

4.1.3. Selection process

In terms of country of origin, the Ulysseus consortium partners have agreed to aim for a 10% proportion of the total number of students for students from each country where the consortium members are seated (Spain, France, Italy, Slovakia, Austria and Finland). Moreover, we want to promote access of the following students:

- As a result of war in Ukraine, more than 100,000 Ukrainian refugees have arrived to Slovakia, where TUKE is seated. We want to support the continuation of the higher education of those refugees that might have experience and interest in the topics of the Ulysseus CitiesMD, especially since this Master programme will give them the skills needed to implement Build Back Better projects upon return to Ukraine. We have appointed 3 scholarships for NDCI countries (the Erasmus+ group where Ukraine is classified at the time of this call).
- Three of our consortium universities are on the coast of the Mediterranean (UniCA, UniGe) or in its area of influence (USE). We want to encourage students from other countries belonging to this area, such as the Western Balkans (IPA countries) or Northern African countries ("Neighbourhood" countries in the NDICI) to apply, and help build transnational bridges between Mediterranean regions. We have appointed 2 scholarships for IPA countries, and 3 for NDCI countries not associated to the programme.

Each applicant's motivation statement, recommendation letters, and CV will be evaluated independently by three different members of the Selection Committee to avoid individual bias.

After this first evaluation round, **the best 80 applicants** will be selected for the second evaluation round, which will consist on a personal interview with a member of the selection committee, in person or on-line. In this interview, the basic scientific background of the applicant, and their transversal skills, motivation, communication skills, and English level will be evaluated (up to 40 points). This score will be added to the candidate's first round score to make up the candidate's final score.

4 GENERAL PROCEDURES

4.1. Admission and selection

4.1.3. Selection process

Finally, the Committee will formulate **a proposal of 50 candidates who will be accepted into the Master**, as well as a reserve list. As soon as the list is approved, all students (accepted or not) will be informed by e-mail by the Joint Master Secretariat. Each accepted student will also be notified by an official e-letter expressly when the student's admission to the Master programme is confirmed. The letter will be accompanied by a brief description of the master's Course, with express reference to its joint character and organization and any other information that may help to complete the paperwork necessary to obtain visas, official permits, etc.

The **student must confirm their commitment to pursuing the programme within 15 days** from the reception of the admission e-letter by sending a signed commitment document via e-mail.

To ensure the clearness and transparency of the selection process, every applicant will have the right to know their final position according to the following scheme:

- **Group I:** Applications of very good quality (score higher than 75 points out of 100).
- **Group II:** Applications of good quality (score between 60 and 75 points out of 100).
- **Group III:** Applications of weak quality (score less than 60 points out of 100).

4 GENERAL PROCEDURES

4.1.5. Enrolment

Enrolment will take place right after being admitted in the programme. This task will be performed by the admin team of the Cities MD programme.

Please note that students should follow the instructions and fees deadlines established by the University of Seville. For further information, please refer to Article 26 of this document (available in Spanish) or, alternatively, please contact **smartcities@us.es**.

4.2. Academic Recognition

For students coming from EHAE universities (including the six Ulysseus university partners), bachelor's degrees will be automatically recognized, according to the Lisbon convention and the Ulysseus Academic Recognition Agreement.

Students with a bachelor-equivalent qualification issued by a non-EHEA HEI must provide a document issued by their university that certifies the student level of studies and stating that the diploma allows the student to access to Master studies in the student university country.

Students will be required to present officially certified copies and translations into English of the student's diplomas and grades and an official certificate of the ECTS content of the subjects and of their position within their corresponding cohort. Successful admission to Ulysseus CitiesMD does not imply that the applicant's previous qualification has been validated to a comparable EHEA qualification entitling rights or granted recognition for any other purposes than access to the master's degree program.

If a candidate is in the process of obtaining the bachelor's degree, the applicant can apply for the admission. The applicant must present a letter, written by his/her university, stating the expected date of graduation and a detailed transcript of records.

4 GENERAL PROCEDURES

4.3. Green Mobility Scheme

To promote environmental responsibility, thus helping to tackle climate and environment-related challenges, Ulysseus has adopted a set of green principles and practical measures for energy use in activities and structures, and for sustainable and smart mobility, thus contributing to develop the Green Deal Mobility Scheme.

Ulysseus green and sustainability principles, to be followed by students, teachers, and non-academic staff of Ulysseus CitiesMD, are:

Reduced carbon footprint: Favour the adoption of means of transport that have a smaller carbon footprint (whenever possible, carbon neutral mobility will be preferred).

Eco-friendly travel: Promote the use of more sustainable alternatives to flying and eco-friendly travel and stay in all project activities, even though they may entail additional financial costs and require more travel time.

Sustainable materials: Foster the purchase and use of sustainable alternatives to single-use plastics and consumable items, including reusable, recyclable, or biodegradable materials, giving preference to suppliers following a circular economy business model.

Sustainable logistics: When physical attendance is required, integrate sustainability considerations in all logistics operations (choice of venue, travel arrangements, accommodation, catering, handouts, and printable materials), at the same time prioritizing locations that can be more easily reached by low-carbon transportation.

Renewable energy: Adopt renewable forms of energy and advocate towards a reduction in energy consumption in all project activities and as part of Universities' operations.

4 GENERAL PROCEDURES

4.3. Green Mobility Scheme

Promote online activities: Encourage the use of online tools (e.g., videoconferencing) when physical mobility is not essential and provide the Ulysseus Community with the infrastructure, resources, and training to harness the full potential of digital technology.

The Ulysseus Green Mobility Guide may help you to make your travels greener! Check it out at Green Mobility Guide.

4 GENERAL PROCEDURES

Grading system and assessment criteria

All Ulysseus joint degrees will use a grading system with an assessment scale from 0 to 100%. The consortium has approved an equivalence table between this system and the corresponding EHEA and national systems (Figure 7). This will allow a fluid communication among the teachers and administrative staff of the partner universities concerning students' transcript of records.

In general, to pass mark on every course, students much achieve 50% and above, unless specified otherwise by the academic regulation of a partner university. Module description tables provided in "Other annexes" include the module workload, general objective, intended learning outcomes, the main module contents, teaching and learning methodology, and the assessment methods. Once deployed, the course guidebooks will also include the % weight of every assessment on the total course score.

The Ulysseus CitiesMD will stablish a transparent compensation policy before the start of the joint programme. In general, students failing to pass individual taught modules will be able to present for supplemental examination or re-submit required work.

4 GENERAL PROCEDURES

Courses and Exam Regulations

Grading systems	Fail	Sufficient	Satisfactory	Good	Very Good	Excellent	Exceptional
ECTS	FX-F	E	D	C	B	A	A+
Ulysseus CitiesMD	0-49%	50-59%	60-69%	70-79%	80-89%	90-99%	100%
SPAIN	0-4.9	5-5.9	6-6.9	7-7.9	8-8.9	9-9.9	10/MH
FRANCE	0-9.9	10-10.9	11-11.9	12-13.9	14-15.9	16-17.9	18-20
ITALY	0-17.9	18-22	23-25	26-27	28-29	30	30/L
ITALY (GRADUATION)		66-83	84-94	94-102	103-109	110	110/L
SLOVAKIA I	Nevyhovél	Dobrý	Dobrý	Vel'mi dobrý	Vel'mi dobrý	Výborný	
SLOVAKIA II	FX	E	D	C	B	B	A+
SLOVAKIA III	4	3	2.5	2.5	2	1.5	1
SLOVAKIA IV	Fail	Good/M	Good	VeryGood /M	VeryGood	Excelent /M	Excelent
AUSTRIA	6-5	4	4	3	3	2	1
FINLAND	Hylätty /Fail (0.0-0.9)	Välttävä /Fair (1.0-1.9)	Tyydyttävä /Satisfactory (2.0-2.9)	Hyvä /Good (3.0-3.9)	Erittäin hyvä / Very good (4.0-4.9)	Kiitettävä/ Excellent (5.0)	N.A.

Figure 7. Ulysseus CitiesMD grading system and its equivalence to the EHEA and national grading systems.

5. STUDENT SUPPORT & FACILITIES

5 STUDENT SUPPORT & FACILITIES

For any question or requirement in the application, enrolment or study phase, please contact smartcities@us.es.

Additionally, each partner's international office will give you assistance as follows:

- **Services "prior to your stay"**: assistance in applying for a visa, information regarding the required documents for entry; assistance in finding living accommodations; advice on family reunion; assistance in applying for financial support as scholarships.
- **Services "after your arrival":** escort service upon arrival in each master's location, assistance in searching for living accommodations, assistance with respect to visa procedure, assistance in matters regarding grant contracts; assistance, advice, and support regarding further questions such as health insurance and banking; arranging for access to the library and computer center (instruction regarding these procedures);
- **Services "during your stay":** coordination of family reunions (when needed), advice regarding a balanced work and family life, supporting the partner in continuing his/her academic career, help in arranging for childcare services; Language course offerings, according to language policy; information regarding cultural events, sport activities, discussion groups etc.
- **Services "at the end of your stay":** organization and coordination of the formalities before departure: cancellation of housing contract.; advice on continued support before returning to your home country; assistance in searching for funding programs; alumni support.

5 STUDENT SUPPORT & FACILITIES

5.1. Before your arrival

VISA

The entry and visa regulations you need to complete to study in Spain will depend on several factors; first of which is your nationality. Anybody who wishes to study abroad should inform themselves about visas and other regulations in the official website of the Ministry of Foreign Affairs of Spain. The exact documentation you need to study in these countries will depend on several factors, most notably your country of residence.

- If you are a citizen of one of the EU countries: you don't need a visa to study and live in Spain. However, you need to apply for a residence permit at the Central Registry Office for Foreigners within 3 months of arrival.
- If you are a citizen of Norway, Switzerland, Iceland or Liechtenstein: you don't need a visa but you need to apply for a residence in the same way citizens of EU countries do.
- If you are a citizen of another country: you will need a visa to study and live in Spain. To obtain your visa, you need to apply via a Spanish embassy or consulate after you receive an official offer of a place. In order to facilitate the information to non-EU national participants, who will need a long-stay visa or a residence permit issued by destination country they will reside in, the link to EU Immigration Portal has been included on the Programme's website, providing links to the national authorities of the Programme countries. https://immigration-portal.ec.europa.eu/index_en

5 STUDENT SUPPORT & FACILITIES

5.1. Before your arrival

VISA

- It is worth mentioning that, following the Directive (EU) 2016/801 that all EU Member States had to transpose into their national legislation, students who hold a valid residence permit issued by a Member State and who are covered by a union or multilateral programme that comprises mobility measures or by an agreement between two or more higher education institutions are allowed to enter and stay in one or more EU member countries in order to carry out part of their studies in a higher education institution for a period up to 360 days, subject to the conditions laid down in Directive (EU) 2016/801. Applying this legislation to UlysseusCitiesMD students, it means that students coming from non-EU countries should apply for a visa in Spain , since the first semester will take place at USE for all student

Please note there are divergences in the services offered by the International offices and by the Student Support staff of partner institutions regarding visa applications. Please consult the information provided for incoming exchange students on relevant institutional websites as soon as you start preparing your mobility period.

For any further question or requirement, please contact **smartcities@us.es**

5 STUDENT SUPPORT & FACILITIES

5.1. Before your arrival

ACCOMMODATION

Accommodation for students in Seville (Year 1)

Rental of room / apartment

The room rental in a private apartment is the most popular choice among students in Seville as it is the cheapest option.

The cost of a room may vary from 200 to 400 euro.

The University of Seville has elaborated a database with more than 1000 apartments that may be available for students: http://sacu.us.es/busca-piso.

Residence halls

The availability of places in residence halls is very limited. The University of Seville launches a call for applications in mid-May for all the students who are enrolled in undergraduate or postgraduate (master's and doctoral studies) at any of the official studies offered by the University of Seville.

In case you are interested to apply for a residence hall, you can contact directly to **sacualojamiento@us.es** and they will provide you with all the information concerning the documents you need to submit.

For any further question or requirement, please contact **smartcities@us.es**

The
LIFE

5 STUDENT SUPPORT & FACILITIES

5.2. After your arrival

To harmonize the services offered to students, the administrative coordinators of the host universities, with the support of the International offices, have agreed on a common procedure to provide support for and after the enrolment. The University of Seville, as coordinating institution, will be in charge of collecting all the necessary documents for the enrolment of all the students in all the Universities involved.

Welcome week and sessions

A specific "Welcome Week" will be organized, to facilitate initial students integration, in order to present the University facilities and the welcome activities reserved to international students, distribute some academic and touristic material; give information about the stay permit procedures and the Spanish immigration laws; visit the town, the main University and research structures in the towns; the deliver for the application for the necessary declarations and forms for stay permit application.

Ulysseus ambassadors (Buddy programme)

Access to the Ulysseus ambassadors programme, a buddy for mentoring incoming students and integrate them in the academic, linguistic, cultural, and social environment of the host institution in **smartcities@us.es**

Support in accommodation, health insurance and assistance, banking

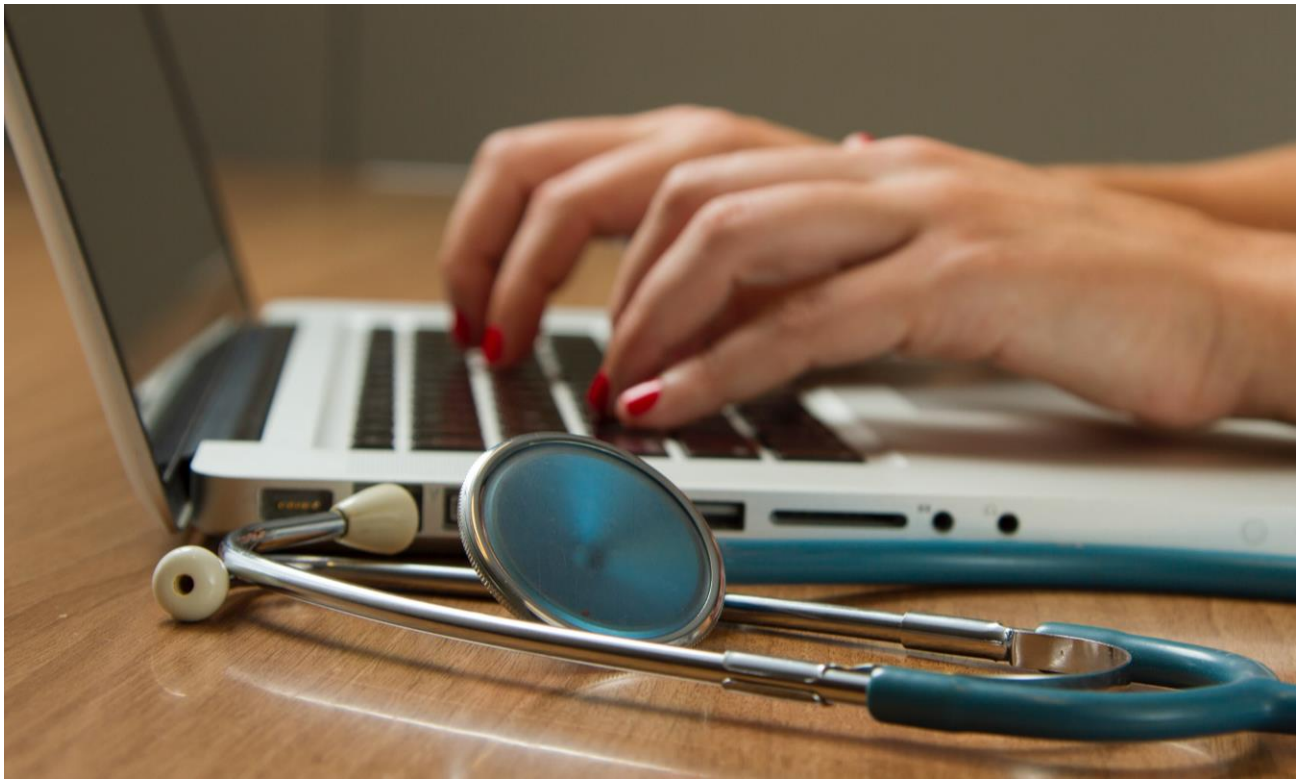
The insurance scheme provides a private health insurance which covers all risks (maternity included). Secretariat is in charge of the organization, arrangement and stipulation of the insurance coverage for each student. A specific voice of financial plan is destined to insurance costs, estimated on consulted private companies' offers. Health insurance, for non-EU citizen, satisfies the "Minimum requirements for the health and accident insurance coverage of Erasmus Mundus Action 1 and Action 2 requirements".

5 STUDENT SUPPORT & FACILITIES

5.2. After your arrival

For EU citizens, it is possible to ask for an extension to Partners' Countries health assistance through one of the following issues: either E 106 or E 109 Form (the latter in case of being in charge of parents). It has to be submitted in Health Local Board to give right to the same cares ones benefits with the enrolment to the Local National Health System, including being assigned a general doctor for free; or the European Health Insurance Card (so called "TEAM Card"), by which student is automatically covered in all EU-member countries for health cares considered as "necessary". The TEAM Card does not cover in any way the "planned health cares" (ex. non urgent tooth cares, thermal treatments, etc.). A general doctor can be consulted by asking for a medical examination. With the invoice issued by the doctor it is possible to obtain a refund by the Health Institution in home country.

For any further question or requirement, please contact **smartcities@us.es**



5 STUDENT SUPPORT & FACILITIES

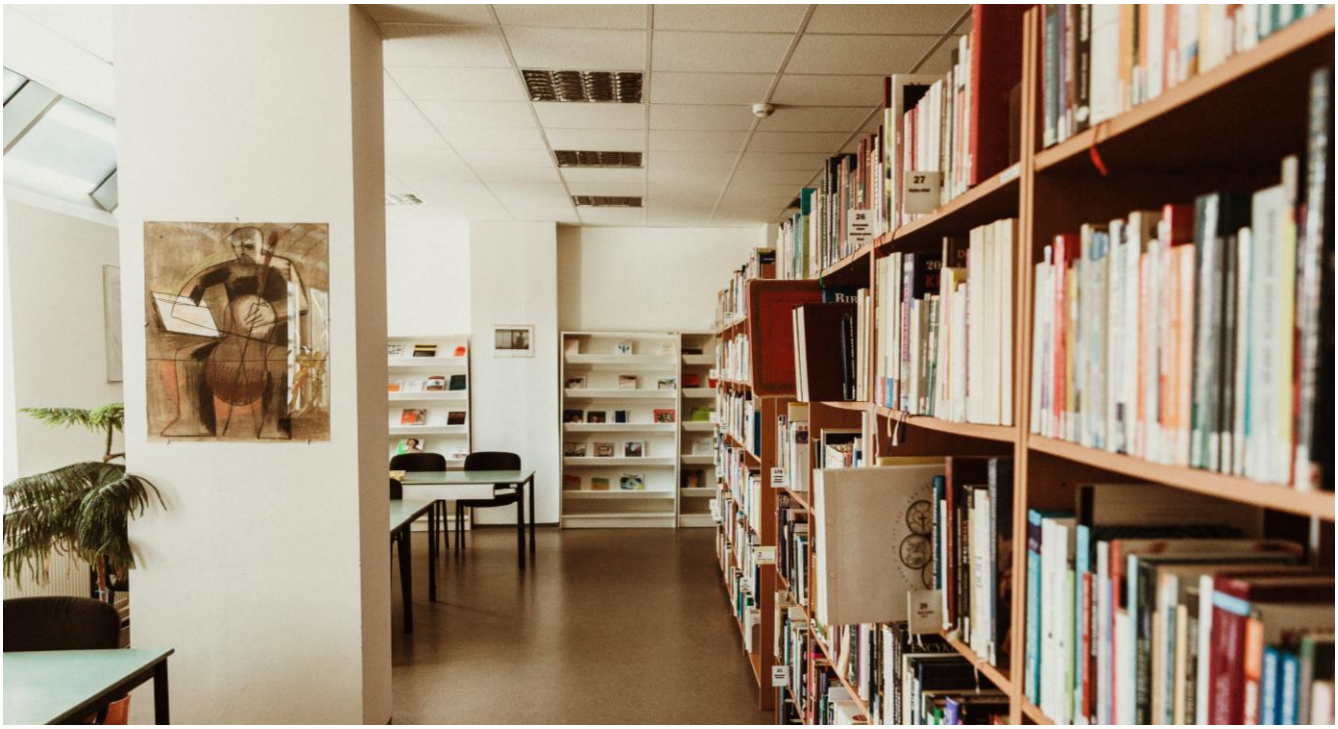
5.3. During your study

To ensure the best higher education experience, Ulysseus European University provides Ulysseus CitiesMD students with seamless access to the joint Ulysseus services and individual services at every partner university.

- Ulysseus Welcome Guide . Here, you can find all the services in each university (The student's card, IT Services, Assistance in family live, childcare, Legal support; Psychological support)
- Ulysseus Language support
- Ulysseus Career guidance programme, to help students to decide their academic itinerary, either professionally or research oriented. A mentor will be assigned to each Ulysseus student to advise them during the courses and provide guidance whenever necessary.

Available Facilities

- Ulysseus Digital Platform (e-learning/teaching/assessment, teaching materials, spaces for teamwork & networking, etc.)
- Libraries and computing facilities
- Access to software
- Access to WIFI



5 STUDENT SUPPORT & FACILITIES

5.3. During your study

Research & Innovation

- Ulysseus Innovation Hubs (joint research centers, incubators, living labs, spaces for networking and open classes, etc)
- University Research Centers & Incubators
- University Research Services

Day-a-day life

- Canteens
- Sport
- Culture
- Kinder gardens

6. HOW TO PARTICIPATE IN ULYSSEUS AND ULYSSEUS CITIESMD

6 HOW TO PARTICIPATE IN ULYSSEUS AND ULYSSEUS CITIESMD

1. In our committees (Academic Steering Committee, Internal QA Committee)

2. Peer teaching and assessment

3. The Erasmus students network

6 HOW TO PARTICIPATE IN ULYSSEUS AND ULYSSEUS CITIESMD

5. Opportunities to enrol in Ulysseus Educational Activities (as part of the flexible semester)

- Short courses
- Language courses
- MOOCs
- Summer/Winter camps
- Entrepreneurship camps
- Civic engagement activities (i.e., open classes, science shops, researcher's night, science fairs)
- Activities related to European values
- Gender mainstreaming
- Volunteering
- Living Labs
- Others

7. CONSORTIUM

7 CONSORTIUM

Ulysseus CitiesMD follows an integrated approach involving the participation of partner universities, students and associated partners. The following pages explain the role of all involved stakeholders.

7.1. Partner Universities

Ulysseus CitiesMD is the first joint pilot master degree of Ulysseus European University and it is led and coordinated by the University of Seville (Spain). A total of six universities of the Ulysseus alliance are involved in this Joint European Programme:

- University of Seville (Spain) – Coordinating University
- Université Côte d'Azur (France)
- University of Genoa (Italy)
- MCI The Entrepreneurial School (Austria)
- Haaga-Helia University of Applied Sciences (Finland)

All partner universities jointly participate in the joint academic governance, admission and recognition, teaching and evaluation, master thesis supervision and assessment, mobility, traineeships (research), and internal QA procedures. They all provide students support, resources and promotion and dissemination of the joint programme.

Consortium members

7 CONSORTIUM

7.2. Students

The Ulysseus students have participated in the joint programme design and will participate in UlysseusCitiesMD academic governance and internal QA procedures. They could also participate in peer-teaching and assessment, on a voluntary basis.

7.3. Associated Partners

The Ulysseus associated partners have a decisive role in the design and implementation of the joint programme. Ulysseus has so far 114 associated partners comprising regional and local governments, specific companies, business confederations, student's and citizen's associations, NGOs, research centers and think-tanks.

All of them have committed to collaborate in Ulysseus activities. Among then, a reduced group (comprising representatives of our cities, technological centers, companies, business corporations and associations of students and citizens) was selected to participate in the joint programme co-creation process.

Ulysseus associated partners will participate in the academic governance and QA structure, admission and selection of students, teaching & training (with an important role in promoting innovation and entrepreneurship), and supervision and evaluation of the master thesis.

They will provide places for professional traineeships, and student's support (i.e., by participating in the career guidance programme).

7 CONSORTIUM

7.4. UlysseusCitiesMD Governing and Management Structure

The Academic Steering Committee

The programme is to be managed by an Academic Steering Committee, responsible for the correct implementation of the joint master and the general management. It is formed by one local academic of each partner university, two representatives of associated partners and one student. The Academic Steering Committee is chaired by the Academic Coordinator of the joint programme.

This Academic Steering committee will be in charge of:

- The General coordination of UlysseusCitiesMD.
- Approving the final list of admitted students.
- Approving changes in the syllabus.
- Approving changes in the admission and evaluation processes.
- Proposing structural changes dealing with academic and administrative aspects.
- Supporting the provision of traineeships for the students, as well as their final assessment.
- Coordinating with the Internal QA Committee for continuous monitoring and Improvement.

This committee will have one sub-committee at each partner university. Each sub-committee will be chaired by the representative forming part of the Academic steering committee and will include two other academics of the corresponding university. The aim of the sub-committees is to solve all the academic issues within their own university.

7 CONSORTIUM

7.4. UlysseusCitiesMD Governing and Management Structure

The Selection Committee

It is in charge of the issues related to the admission criteria, the selection procedure, and awarding of possible scholarships to best and disadvantaged students. It is formed by one academic from each partner university, as well as one person representing the associated partners. None of them can be a member of the Steering Committee. This Selection Committee will have regular meetings (mainly online) before the beginning of each joint master edition to manage all applications received and to apply the admission criteria for the student selection process, as well as for the award of possible scholarships.

The UlysseusCitiesMD Selection Committee is in contact with the Ulysseus Academic Recognition Board, which will ensure the coordination with the Academic Recognition Committees of each Ulysseus partner university, in order to promote flexible and automatic academic recognition within Ulysseus.

The Internal Quality Assurance Committee

It ensures the joint programme internal quality assurance and designs improvement strategies. This committee is formed by one academic from each partner university, two representatives of associated partners, and two students of the current edition of the joint programme. This committee will implement all the internal evaluation strategies and mechanisms.

The UlysseusCitiesMD Internal QA Committee is in contact with:

- The Ulysseus body for internal monitoring: RADAR Observatory (internal monitoring and foresight).
- The USE Unit for QA Management, which in turns coordinates the accreditation and following up of the joint degree in contact with the external QA Agency ACCUA.

7 CONSORTIUM

7.4. UlysseusCitiesMD Governing and Management Structure

The Joint Master Secretariat

It is the operative unit in charge of executive management, communication with other partners, administrative and financial management. It is located at the International Graduate School (IGS) of the coordinating institution USE and is composed by UlysseusCitiesMD Academic Coordinator, one Project Manager, and one Administrative Assistant, and supported by the staff from the USE's IGS.

The Joint Master Secretariat is in contact with:

- Local administrative and financial staff at every partner university, in order to supervise the exchange of student documentation among partners, as well as dealing with financial issues. Each partner university will establish an Administrative Contact Point, following a single window principle, that will act as a recipient of any queries and petitions and will present them to the steering committee when not able to provide an adequate answer to them. It will offer services to students, academic staff, administrative staff and the general public.
- USE International Centre, whose Mobility Office is in contact with the Mobility Office of each partner university and the Ulysseus Mobility Office. During the mobility periods (study, traineeships), USE as coordinating institution, will take care of communicating all student data to the other Universities/Centres/Companies to ensure that all students benefit from services like student rooms, canteen, library, language courses, etc. All students during the Master period will have health insurance, and administrative help. Non-EU students will receive special support jointly by the coordinator and the other host Institutions, to facilitate and speed up the visa procedure.

8. CONTACT ULYSSEUS CITIESMD

8 CONTACT ULYSSEUS CITIESMD

Programme Director
Esther Romero Ramos (USE)
Francisco Javier Pino Lucena (USE)

Academic Steering Committee
Marianna Sinicakova (TUKE)
Esther Romero (USE)
Matteo Caglioni (UniCA)
Andreas Mehrle (MCI)
Marjaana Mäkelä (HH)
Marco Fossa (UniGe)

Selection Committee
Natália Vašková (TUKE)
Javier Pino (USE)
Erwin Franket (UniCA)
Andreas Mehrle (MCI)
Marjaana Mäkelä (HH)
Nicoletta Tambroni (UniGe)

Internal QA Committee
Natália Vašková (TUKE)
Ascensión Zafra (USE)
Helene Lagier (UniCA)
Brigitte Auer (MCI)
Minna-Maari Harmaala (HH)
Chiara Calderini (UniGe)

Secretariat
María del Carmen Hinojosa

For any further question or requirement, please contact
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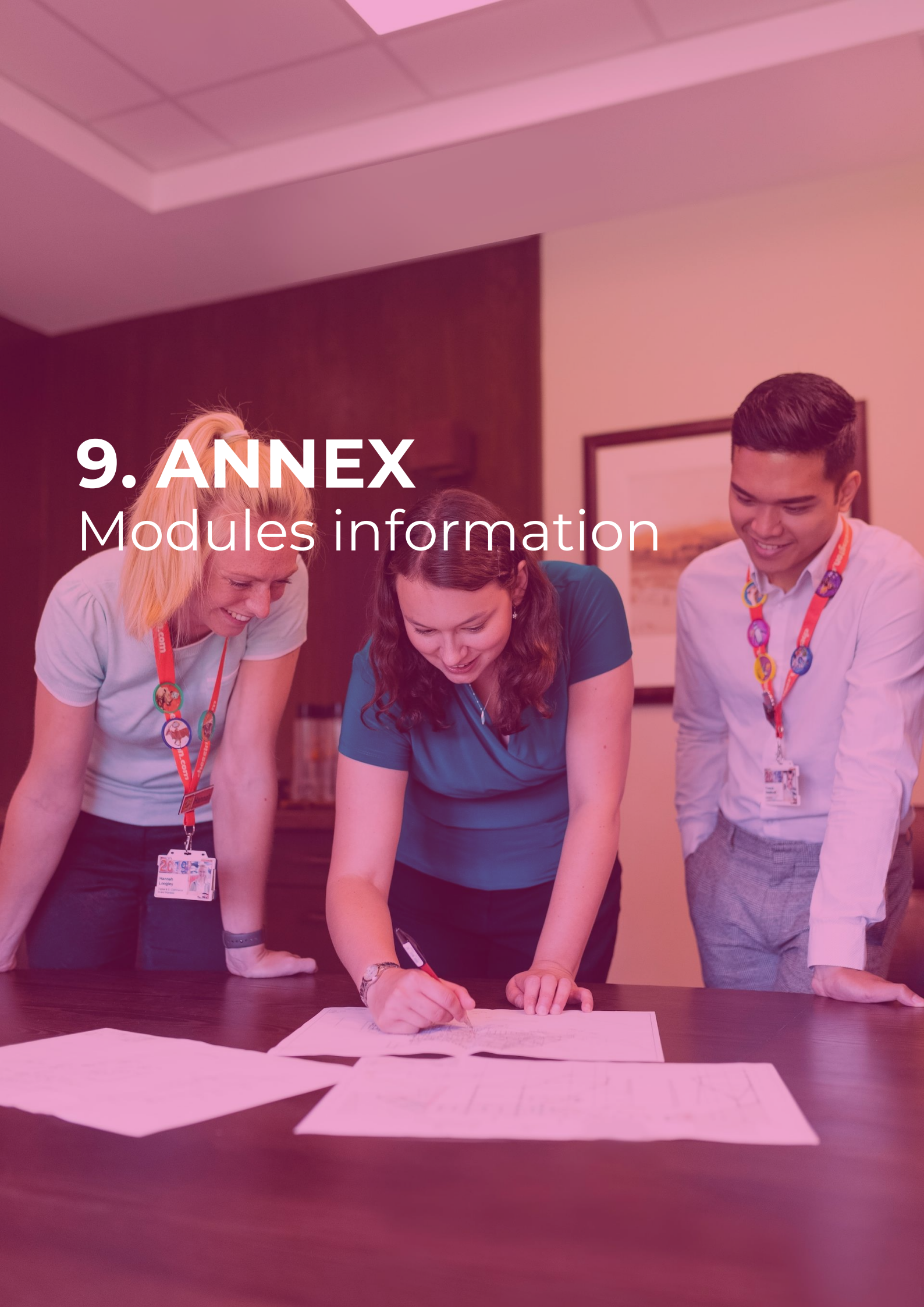

9. ANNEX
Modules information

9 MODULES INFORMATION

Structure of the joint study programme

Description of the Modules[1]

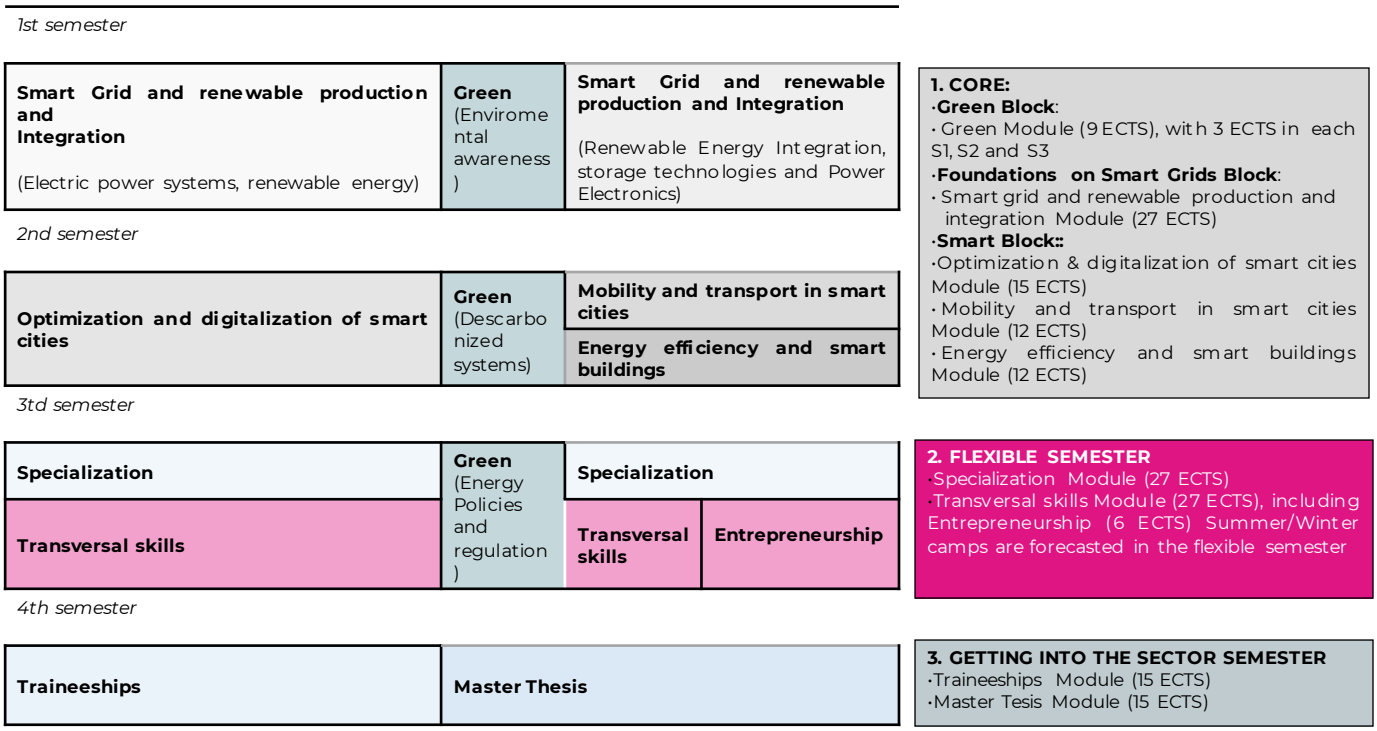

Figure 5. Ulysseus CitiesMD temporal and modular structure

[1] During the implementation of Ulysseus CitiesMD, every module will be deployed in the corresponding courses.

9 MODULES INFORMATION

Module Name	**GREEN**
ECTS workload	9
Semester	S1, S2; S3
Compulsory/elective	Compulsory
Objectives	Like a spine, the green module vertebrates the contents dealing with an environmentally friendly mindset, the 2030 agenda and SDGs, including environmental awareness, decarbonized systems and energy policies and regulation at the EU level, among other contents.
PLOs	See annex 4
Brief description of contents	• Environmental awareness, • Decarbonization, Energy Policy and regulation • Sustainable Development Goals • Environmental awareness • Decarbonization of Industry • Energy Policy in Europe vs rest of the world • Regulation, Standards and Grid codes • Electric Market regulations • Hydrogen technologies • Materials in Green Technologies
Offered by	USE, UniCA, MCI, TUKE, UniGe, HH
Teaching Team	All partner universities, associated partners, external experts and volunteer students.
Language	English
Teaching format	Hybrid (onsite & online)
Teaching and Learning methodology	Seminars and Project/challenge-based learning
Assessment	Reports related to with topics, included or not, in the seminars. Students will have to do a research work about other related topics. Groups will present written reports and make oral presentation of them, in a seminar format

9 MODULES INFORMATION

Name	**SMART GRID AND RENEWABLE ENERGY PRODUCTION AND INTEGRATION**
ECTS workload	27
Semester	S1
Compulsory/elective	Compulsory
Objectives	It covers the most relevant aspects of electrical systems supporting cities, focusing on the "Smart grid" concept, along with different structural elements. The core contents of the programme are developed around renewable energy, generated, and integrated into the system by means of power electronics.
PLOs	See annex 4
Brief description of contents	Electric Power Systems (Smart Grid); Renewable Energy production and Integration and storage technologies • Electric power systems knowledge • Energy Systems • management of energy resources • Distributed Energy Resources • Energy Management Systems • Optimization in Power Systems • Ageing of Power Conversion Systems • Electric Power Systems • Energy storage • Smart Grids • Power Quality • Fault Tolerant Capability Systems • Analysis of Electric Power systems • Efficiency in Power Conversion Systems • The role of power electronics in Renewable Energy Systems • Monitoring and control of Electric Power systems • Energy Technology • Renewable Energy Integration into the systems • Power sector - Solar panels • Regulation, Standards and Grid codes • Renewable Energy production Technologies • Hydrogen technologies

9 MODULES INFORMATION

Offered by	USE
Teaching Team	Mainly USE and TUKE, with participation of UniCA, MCI, Associated partners and external experts Volunteer students
Language	English
Teaching format	Onsite / online / hybrid (onsite & online)
Teaching and Learning methodology	• Lectures • Seminars and tutorials • Project/challenge-based learning • Visits to companies, facilities, and public administration • Laboratory and practical learning of experimental methods and techniques
Assessment	Some technical aspect will be assessed by written examination. To bring real world to students, they will face practical and real situations using software simulation and simulation in labs. To foment interdisciplinarity, students in groups will face interdisciplinary projects covering the whole module. Groups will present written reports and make oral presentation of them, in a seminar format. The evaluation process will consider design thinking, leadership, role in groups, etc. These projects will be an important percentage of the assessment. Roleplay situation, were each student or group face one aspect related to a real project about Smart grid and renewable energy.
See all the subjects on the website	https://ulysseus.eu/ulysseuscitiesmd/study-programme/

9 MODULES INFORMATION

Name	**OPTIMIZATION AND DIGITALIZATION OF SMART CITIES**
ECTS workload	15
Semester	S2
Compulsory/elective	Compulsory
Objectives	This is a compulsory module including digitalization, and system, structure, and device optimisation. Different kinds of applied optimisation algorithms are to be covered, including artificial intelligence, big data, and system interactions enabling the implementation of a city smart management.
PLOs	See Annex 4
Brief description of contents	Optimization and Digitalization Smart Cities • AI (Artificial Inteligencie) • Domotics and Building Management Systems • Fault Tolerant Capability Systems • Data models: (PostgreSQL, Cassandra, MongoDB • Automatic Control • Digital Twins and Cyberphysical Systems • microservices // Docker // Kubernetes • Optimization Techniques • Internet of Things (internet of Energy) • Monitoring and control of Electric Power systems • Advanced Metering Infrastructure • Communication protocols • Sensors - Perception, data gathering and interpretation • Optimization Techniques • Strong Programming Skills • Modelling and simulation. • Advanced Math fundamentals • Control of Python libraries • Knowledge in Tensorflow • Software Skills (used in the professional scope) • Digital Twins and Cyberphysical Systems

9 MODULES INFORMATION

Offered by	USE
Teaching Team	Mainly USE and TUKE, with the participation of teachers/trainers from UniCA Associated partners and external experts Volunteer students
Language	English
Teaching format	Onsite / online / hybrid (onsite & online)
Teaching and Learning methodology	• Lectures • Seminars and tutorials • Project/challenge-based learning • Visits to companies, facilities and public administration • Laboratory and practical learning of experimental methods and techniques
Assessment	Some technical aspect will be assessed by written examination. To bring real world to students, they will face practical and real situations using software simulation and simulation in labs. To foment interdisciplinarity, students in groups will face interdisciplinary projects covering the whole module. Groups will present written reports and make oral presentation of them, in a seminar format. The evaluation process will consider design thinking, leadership, role in groups, etc. These projects will be an important percentage of the assessment. Roleplay situation, were each student or group face one aspect related to a real project about Smart grid and renewable energy
See all the subjects on the website	https://ulysseus.eu/ulysseuscitiesmd/study-programme/

9 MODULES INFORMATION

Name	**MOBILITY AND TRANSPORT IN SMART CITIES**
ECTS workload	12
Semester	S2
Compulsory/elective	Elective
Objectives	This is an elective module that includes city mobility, electric vehicles, logistics, and traffic management, among other topics.
PLOs	See annex 4
Brief description of contents	Mobility. Traffic people, goods and vehicles • Traffic Management • Electric vehicles • Transport Systems • Autonomous systems • Mobility • Logistics • Electric-powered vehicles and infrastructure
Offered by	USE
Teaching Team	Mainly USE and TUKE, with the participation of teachers/trainers from UniCA Associated partners and external experts Volunteer students
Language	English
Teaching format	Onsite / online / hybrid (onsite & online)

9 MODULES INFORMATION

Teaching and Learninxg methodology	• Lectures • Seminars and tutorials • Project/challenge-based learning • Visits to companies, facilities, and public administration • Laboratory and practical learning of experimental methods and techniques • Access to an online library of commercial projects • Commercial software for simulation • Social media and media news about smart city topics for discussions
Assessment	Some technical aspect will be assessed by written examination. To bring real world to students, they will face practical and real situations using software simulation and simulation in labs. To foment interdisciplinarity, students in groups will face interdisciplinary projects covering the whole module. Groups will present written reports and make oral presentation of them, in a seminar format. The evaluation process will consider design thinking, leadership, role in groups, etc. These projects will be an important percentage of the assessment. Roleplay situation, were each student or group face one aspect related to a real project about mobility and transport in smart cities
See all the subjects on the website	https://ulysseus.eu/ulysseuscitiesmd/study-programme/

9 MODULES INFORMATION

Name	Energy Efficiency and Smart Buildings
ECTS workload	12
Semester	S2
Compulsory/elective	Elective
Objectives	This is an elective module including buildings, smart management, new building materials, etc.
PLOs	See annex 4
Brief description of contents	• Energy efficiency and smart buildings • Energy efficient heating and cooling system • Domotics and building management systems • Treatment of water in buildings • Energy efficiency directive • Energy efficiency certification • Renewable energy systems integration in buildings
Offered by	USE
Teaching Team	Mainly USE and TUKE, with the participation of teachers/trainers from UniCA Associated partners and external experts Volunteer students
Language	English
Teaching format	Onsite / online / hybrid (onsite & online)

9 MODULES INFORMATION

Teaching and Learning methodology	• Lectures • Seminars and tutorials • Project/challenge-based learning • Visits to companies, facilities, and public administration • Laboratory and practical learning of experimental methods and techniques • Access to an online library of commercial projects • Commercial software for simulation • Social media and media news about smart city topics for discussions
Assessment	Some technical aspect will be assessed by written examination. To bring real world to students, they will face practical and real situations using software simulation and simulation in labs. To foment interdisciplinarity, students in groups will face interdisciplinary projects covering the whole module. Groups will present written reports and make oral presentation of them, in a seminar format. The evaluation process will consider design thinking, leadership, role in groups, etc. These projects will be an important percentage of the assessment. Roleplay situation, were each student or group face one aspect related to a real project about energy efficiency and smart buildings
See all the subjects on the website	https://ulysseus.eu/ulysseuscitiesmd/study-programme/

9 MODULES INFORMATION

Name	**SPECIALIZATION**
ECTS workload	27
Semester	S3
Compulsory/elective	Elective
Objectives	The Specialization module is oriented towards a further specialization in smart cities by means of elective courses. Also, this module brings the students the opportunity to know the latest aspects related with smart cities.
PLOs	See annex 4
Brief description of contents	Each partner university offers elective courses for students to acquire a deeper understanding of the technical aspects and specific competences related to smart cities. This module enables students also to keep up with the latest research and innovation developments in the field and brings the latest challenges in the sector so that students can grasp what the future of smart cities will look like.
Offered by	All partners universities
Teaching Team	All partners universities, Associated partners and external experts Volunteer students
Language	English
Teaching format	Onsite / online / hybrid (onsite & online)

Teaching and Learning methodology	• Lectures • Seminars and tutorials • Project/challenge-based learning • Visits to companies, facilities, and public administration • Laboratory and practical learning of experimental methods and techniques
Assessment	Some technical aspect will be assessed by written examination. To bring real world to students, they will face practical and real situations using software simulation and simulation in labs. To foment interdisciplinarity, students in groups will face interdisciplinary projects covering the whole module. Groups will present written reports and make oral presentation of them, in a seminar format. The evaluation process will consider design thinking, leadership, role in groups, etc. These projects will be an important percentage of the assessment. Roleplay situation, were each student or group face one aspect related to a real project about the whole module
See all the subjects on the website	https://ulysseus.eu/ulysseuscitiesmd/study-programme/

9 MODULES INFORMATION

Name	**TRANSVERSAL SKILLS**
ECTS workload	27
Semester	S3
Compulsory/elective	Elective
Objectives	The Transversal skills module contains a set of transversal training courses and activities dealing with innovation, high level digital skills, communication skills, and languages, complemented with Ulysseus Educational Activities
PLOs	See Annex 4
Brief description of contents	• Innovation (business management, intellectual property rights, entrepreneurship, creativity, leadership) • Activities related to use the "cities as living labs" and activities within the living labs integrated in the Ulysseus IH • High level digital skills • Communication skills • Languages (at least the six partner countries language courses, plus English) • Ulysseus single-partner and joint Educational Activities: i.e., specific academic courses, visits (to the IH, public administrations, related companies and research centers), seminars, summer/winter schools, volunteering, civic engagement activities (i.e., open classes, science shops, Science fairs, Researchers night) or activities related to the promotion of the European values, among others.
Offered by	All partners universities

Teaching Team	All partners universities, Associated partners and external experts Volunteer students
Language	English, local languages of the country partner universities
Teaching format	Onsite / online / hybrid (onsite & online)
Teaching and Learning methodology	• Lectures • Seminars & Tutorials • Independent study • Laboratory and Practical learning • Trip Field • Problem-Based
Assessment	Specific criteria shall apply depending on the courses offered by each partner, to be described in the course description and available to students prior to registration.
See all the subjects on the website	https://ulysseus.eu/ulysseuscitiesmd/study-programme/

9 MODULES INFORMATION

NAME	**TRAINEESHIP**
ECTS WORKLOAD	15
SEMESTER	S4
COMPULSORY/ELECTIVE	Compulsory
OBJECTIVES	Students will put into practice the skills acquired throughout the programme and gain skills to complement their profiles and get ready to enter the labour market or research career
PLOS	See Annex 4
BRIEF DESCRIPTION OF CONTENTS	Two main traineeship options are available: In a company/public administration (i.e., the city halls). The Ulysseus associate partner network ensures the availability of traineeships for students to learn about the sector from the inside. In a research group of one of the six university partners, where the students can work in research and innovation projects facing the challenges of the smart cities of future.
OFFERED BY	All partners universities
TEACHING TEAM	All partners universities, Associated partners and external experts
LANGUAGE	English, local languages of the country partner universities
TEACHING FORMAT	Onsite
TEACHING AND LEARNING METHODOLOGY	• Laboratory and Practical learning • Problem-Based Project Learning through research
ASSESSMENT	• Research-based reports • Research-informed position papers "In company reports" • More information will be available at the Traineeships guidebook.

9 MODULES INFORMATION

Name	**MASTER THESIS**
ECTS workload	15
Semester	S4
Compulsory/elective	Compulsory
Objectives	The master's programme design is highly committed to the acquisition of transversal competences. The master thesis aims at providing answers to a realistic challenge project from an innovative and interdisciplinary point of view.
PLOs	See Annex 4
Brief description of contents	The master thesis It can be business- or research-oriented and combined with the traineeship period. Students will receive a joint supervision between researchers from the partner universities and external experts (if research-oriented) or associated partners (if professionally oriented). External experts and Associated partners will be also involved in the evaluation committee of the master thesis dissertations. The master's thesis for a student will be part of a very big common project to be developed partially by several students. This requires the coordination among professors and disciplines, as well as a group allocation that is consistent with the programme's objectives. The master thesis will boost contact between professors and students and will allow students to develop it from any of the 6 institutions by means of digital collaboration.
Offered by	All partners universities

Teaching Team	All partners universities, Associated partners and external experts Volunteer students
Language	English, local languages of the country partner universities
Teaching format	Onsite / hybrid (onsite & online)
Teaching and Learning methodology	• Laboratory and Practical learning • Problem-Based Project • Learning through research
Assessment	(1) Once the development of the Master's Thesis is completed by a student, they will submit its final version to their supervisor(s) for revision and assessment. The assessment will require from the supervisor(s) to issue a signed evaluation report, based on a jointly designed grading system guideline. If the overall result of the report is positive, and the student has previously passed all the ECTS of the Master Programme except from the ones associated to the Master's Thesis (15 ECTS), all requirements for the defense of the thesis to take place will be fulfilled. (2) Once the Master's Thesis receives positive feedback from the supervisor(s), a "Thesis Committee", made up of three members, will assess both the submitted document and the oral thesis defense. The final score and, subsequently, the grade, will result from the average score obtained from of the assessments carried out by the supervisor(s) and the TC members.

Assessment	The Thesis Committee shall be proposed and approved by the Academic Steering Committee for each Master's Thesis, being eligible as the Committee's members any professors who teach on the Joint Master Programme, and taking into account the adequacy of their areas of expertise with the topic and scope of the thesis to be evaluated. It is compulsory for at least one member of the TC to belong to any university within the UlysseusCitiesMD consortium different from the one the supervisor(s) come from. Additionally, an external expert (e.g., from associated companies/research centres) can be appointed as one of the members of the TC. The Academic Steering Committee will define and approve a Master's Thesis guide that includes, among other information, the abovementioned evaluation approach, a set of standard requirements for the Master's Thesis document to follow, and the grading system guideline. Some of the key descriptors to take into account for defining the latter will be: definition of topic and goals, understanding of the topic and relevant theoretical framework, methodology and structure, contribution to knowledge, conclusions, presentation and language. The guideline will include the descriptors' definitions and the extent to which the thesis should meet the set criteria in order for a specific grade to be assigned. All three parties (supervisor(s), Thesis Committee members and students themselves) will have the access to the guideline, so that the transparency of the grading process is ensured.

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Joint European Master Degree in Efficient and Sustainable Energy Transport and Mobility to Build the Smart Cities of the Future – Ulysseus CitiesMD

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Università di Genova
TECHNICAL UNIVERSITY OF KOŠICE
MCI THE ENTREPRENEURIAL SCHOOL
Haaga-Helia University of Applied Sciences

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